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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/775,720	02/02/2001	Eric C. Anderson	18602-05753	7919

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[REDACTED] EXAMINER

WILSON, JACQUELINE B

[REDACTED] ART UNIT [REDACTED] PAPER NUMBER

2612

DATE MAILED: 07/02/2003

+4/2
15

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 09/775,720	Applicant(s) Anderson et al.
	Examiner Jacqueline Wilson	Art Unit 2612
<i>-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --</i>		
Period for Reply <p>A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>three</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.</p> <ul style="list-style-type: none"> - Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely. - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication. - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). - Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b). 		
Status <p>1) <input checked="" type="checkbox"/> Responsive to communication(s) filed on <u>Mar 17, 2003</u></p> <p>2a) <input type="checkbox"/> This action is FINAL. 2b) <input checked="" type="checkbox"/> This action is non-final.</p> <p>3) <input type="checkbox"/> Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i>, 1935 C.D. 11; 453 O.G. 213.</p>		
Disposition of Claims <p>4) <input checked="" type="checkbox"/> Claim(s) <u>1-36</u> is/are pending in the application.</p> <p>4a) Of the above, claim(s) _____ is/are withdrawn from consideration.</p> <p>5) <input checked="" type="checkbox"/> Claim(s) <u>1-15, 20-23, 28-30, 33, and 34</u> is/are allowed.</p> <p>6) <input checked="" type="checkbox"/> Claim(s) <u>16, 17, 19, 24, 25, 27, 31, 32, 35, and 36</u> is/are rejected.</p> <p>7) <input checked="" type="checkbox"/> Claim(s) <u>18 and 26</u> is/are objected to.</p> <p>8) <input type="checkbox"/> Claims _____ are subject to restriction and/or election requirement.</p>		
Application Papers <p>9) <input type="checkbox"/> The specification is objected to by the Examiner.</p> <p>10) <input type="checkbox"/> The drawing(s) filed on _____ is/are a) <input type="checkbox"/> accepted or b) <input type="checkbox"/> objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).</p> <p>11) <input type="checkbox"/> The proposed drawing correction filed on _____ is: a) <input type="checkbox"/> approved b) <input type="checkbox"/> disapproved by the Examiner. If approved, corrected drawings are required in reply to this Office action.</p> <p>12) <input type="checkbox"/> The oath or declaration is objected to by the Examiner.</p>		
Priority under 35 U.S.C. §§ 119 and 120 <p>13) <input type="checkbox"/> Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).</p> <p>a) <input type="checkbox"/> All b) <input type="checkbox"/> Some* c) <input type="checkbox"/> None of: 1. <input type="checkbox"/> Certified copies of the priority documents have been received. 2. <input type="checkbox"/> Certified copies of the priority documents have been received in Application No. _____. 3. <input type="checkbox"/> Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).</p> <p>*See the attached detailed Office action for a list of the certified copies not received.</p> <p>14) <input type="checkbox"/> Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e). a) <input type="checkbox"/> The translation of the foreign language provisional application has been received.</p> <p>15) <input type="checkbox"/> Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.</p>		
Attachment(s) <p>1) <input type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____</p> <p>4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6) <input type="checkbox"/> Other: _____</p>		

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DETAILED ACTION

Reissue Applications

Response to Arguments

1. Applicant's arguments with respect to claims 16, 19, and 24-28 have been considered but are moot in view of the new ground(s) of rejection.

Please new ground of rejections below.

Claim Objections

2. Claim 17 is objected to because of the following informalities:

In line 3, "frame" should be changed to --memory--.

Appropriate correction is required.

Claim Rejections - 35 U.S.C. § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. **Claims 16, 17, 19, 24, 25, 27, 31, 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parulski et al. (US 5,633,678) and Kosonocky et al. (US 5,335,165).**

Regarding Claim 16, Parulski et al.'678 teaches an imaging device (12), first routines for conveying raw image data to a second memory (18) to provide space for storing additional captured images, wherein the raw image data is stored in uncompressed form in the second memory and wherein the second memory has the capacity to store complete raw image data for multiple raw images (figure 2 shows the image buffer contains a plurality of frames before input into the compression and recording section B), second routines for conveying the raw image data from the second memory to a processor for processing the raw image data and for storing the processed image data (col. 4, lines 34-38). Parulski et al.'678 teaches that the imaging device (12) is a conventional charge-coupled device (CCD) using either a well-known interline transfer or frame transfer technique (col. 3, lines 58-62). Although Parulski et al.'678 fails to specifically disclose the structure of the image device, it is notoriously well known in the art to include storage sections within an imaging device for temporarily storing raw image data. Kosonocky et al.'165 teaches this concept as shown in figures 1,2,3, 4A and 4B. Kosonocky et al.'165 teaches that information is serially transferred from each photodiode to its associated storage register functioning as a local analog memory (col. 8, lines 61+). Each pixel (P_{ij}) is transferred to storage sections (G_{ij}) within the CCD thus enabling high speed transfer of raw image data. Since Parulski et al.'678 teaches the image device is a well known CCD, it would have been obvious to construct the image device as taught in Kosonocky et al.'165 for the purpose of storing raw

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image data into a first memory such that the next image may be obtained in each pixel. This combination would allow Parulski et al.'678 to convey the initially stored raw image data away from the memory buffer (within the CCD) to the second memory (18) in which several frames of data is stored. Therefore, it would have been obvious to one having ordinary skill in the art to modify Parulski et al.'678 with Kosonocky et al.'165 for teaching a memory buffer for initially storing raw image data.

Parulski et al.'678 further discloses a central processing unit (referred to as processor 20) coupled to the imaging device and the memory buffer (which would be the local memory as taught by Kosonocky et al.'165) for executing according to a predetermined set of priorities the first and second routines, and wherein the first routines are assigned priority (since it captures the images and temporarily stores them) over the second routines (for processing and storing to a second memory) to thereby facilitate the rapid conveyance of raw image data away from the memory buffer. The limitation "facilitate rapid conveyance..." is interpreted in its broadest sense because there is nothing compared regarding the expeditiousness of transferring the raw image data away from the memory buffer.

Regarding Claim 17, Parulski et al.'678 teaches the first routines are configured to convey the initially stored raw image data from the memory buffer to a RAM disk (col. 4, lines 41+).

Claim 19 is analyzed and discussed with respect to Claim 16. The limitation of transferring the raw image data to a second memory that is external to any processing chip is

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shown in figure 2. The second memory (18) is separate from any processing chip. Also, Parulski et al.'678 teaches that the second memory (18) applies the stored data to the processing unit (22) once a certain amount of image data has been accumulated (col. 4, lines 23+). This inherently teaches that transferring raw image data to the second memory has a higher priority than transferring raw image data to a processor since image data isn't transferred until a certain amount of data is acquired in the second memory.

Claim 24 is analyzed and discussed with respect to Claim 16 (processing/compression routine is shown in figure 2 section B). The limitation of a processor for executing the routines according to their priority and according to available processor time is now discussed. Parulski et al.'678 teaches that the processor (20) is programmed to perform a variety of functions (col. 4, lines 9-10). Thus the processor must perform each function in a predetermined time to complete each task. Therefore, in order for the processor to perform the claimed routine according to the programmed functions, it is inherent that the processor is functioning according to available processor time depending on which function is executing the specific task.

Regarding Claim 25, Parulski et al.'678 teaches a third routine which moves raw image data out of the first memory (18), the third routine having a priority between that of the first spooler routine and that of the processing/compression routine (see fig. 2).

Claim 27 is analyzed and discussed with respect to Claim 24. Although Parulski et al.'678 does not specifically disclose the completion of each step, it is inherently taught that each

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step is completing its task. One having ordinary skill would recognize that each step is performed one step at a time.

Regarding Claim 31, Parulski et al.'678 teaches the central processing unit is physically embedded in a single physical apparatus (see fig. 2).

Claim 35 is analyzed and discussed with respect to Claim 16. The limitation of wherein the second routines are not conducted until there are no pending image capture requests and the first routines have conveyed all initially stored raw image data away from the memory buffer is also taught in Parulski. Parulski teaches that when the camera has captured a predetermined amount of image data that can be captured/stored in the imaging device as taught in Claim 16, the images are transferred to a second memory (18). Pending image capture requests are inoperable if there isn't remaining space for capture in the image buffer to maintain. This reads on the limitation above.

Regarding Claim 36, Parulski et al.'678 teaches an imaging device (12) and a central processing unit (20). However, Parulski et al.'678 fails to specifically teach storing the raw image data in a memory buffer. Parulski et al.'678 teaches that the imaging device (12) is a conventional charge-coupled device (CCD) using either a well-known interline transfer or frame transfer technique (col. 3, lines 58-62). Although Parulski et al.'678 fails to specifically disclose the structure of the image device, it is notoriously well known in the art to include storage sections within the imaging device for temporarily storing raw image data. Kosonocky et al.'165 teaches this concept as shown in figures 1,2,3, 4A and 4B. Kosonocky et al.'165 teaches that

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information is serially transferred from each photodiode to its associated storage register functioning as a local analog memory (col. 8, lines 61+). Each pixel (P_{ij}) is transferred to storage sections (G_{ij}) within the CCD thus enabling high speed transfer of raw image data. Since Parulski et al.'678 teaches the image device is a well known CCD, it would have been obvious to construct the image device as taught in Kosonocky et al.'165 for the purpose of storing raw image data into a memory buffer such that the next image may be obtained in each pixel. This combination would allow Parulski et al.'678 central processing unit (20) to further be coupled to the imaging device and memory buffer for transferring the raw image data to a second memory (18). Therefore, it would have been obvious to one having ordinary skill in the art to modify Parulski et al.'678 with Kosonocky et al.'165 for teaching a memory buffer for initially storing raw image data.

Parulski et al.'678 also teaches processing the raw image data without the assistance of a second processor (col. 4, lines 20-22 obtains date/time information for each image) and storing the processed image data according to a predetermined set of priorities. Parulski et al.'678 inherently teaches transferring the raw image data has a higher priority than processing the raw image data since it is taught that a plurality of images are stored in the second memory (18) to capture more images before further processing, which would enable rapid image capture and storage capability.

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Claim Rejections - 35 U.S.C. § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parulski et al.'678, Kesonocky et al. (US 5,335,165) and in further in view of Aciu et al. (US 5,625,412).**

Regarding Claim 32, Parulski et al.'678 fails to specifically disclose the central processing unit is physically embedded in a personal computer to which the imaging device is communicatively coupled. However, Aciu et al.'412 it is notoriously well known in the art to include a central processing unit in a computer as shown in figure 1. Also, Aciu et al.'412 discloses the processor (computer 12) is communicatively coupled to the imaging device (3). Aciu et al.'412 teaches that it is advantageous to have the central processing unit embedded in a single physical apparatus (as well as the imaging device) which reduces the size of the apparatus into a compact hand held device. Therefore, it would have obvious to one having ordinary skill in the art to include the central processing unit is physically embedded in a personal computer to which the imaging device is communicatively coupled.

Allowable Subject Matter

7. **Claims 1-15, 20-23, 28-30, and 33-34 are allowed.**

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8. **Claims 18 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.**

Conclusion

9. Any inquiries concerning this communication from the examiner should be directed to **Jacqueline Wilson** whose telephone number is (703) 308-5080. The examiner can normally be reached Monday-Friday (alternate Fridays off) from 9:00 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Wendy Garber**, can be reached at (703) 305-4929. The fax number for this group is (703) 872-9314.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or Faxed to:

(703) 872-9314, (for informal or draft communications, please label
“PROPOSED” or “DRAFT”)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, V.A., Sixth Floor (Receptionist).

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JBW

June 18, 2003

Wendy R. Garber
WENDY R. GARBER
SUPERVISORY PATENT EXAMINER
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